

FIG. 1

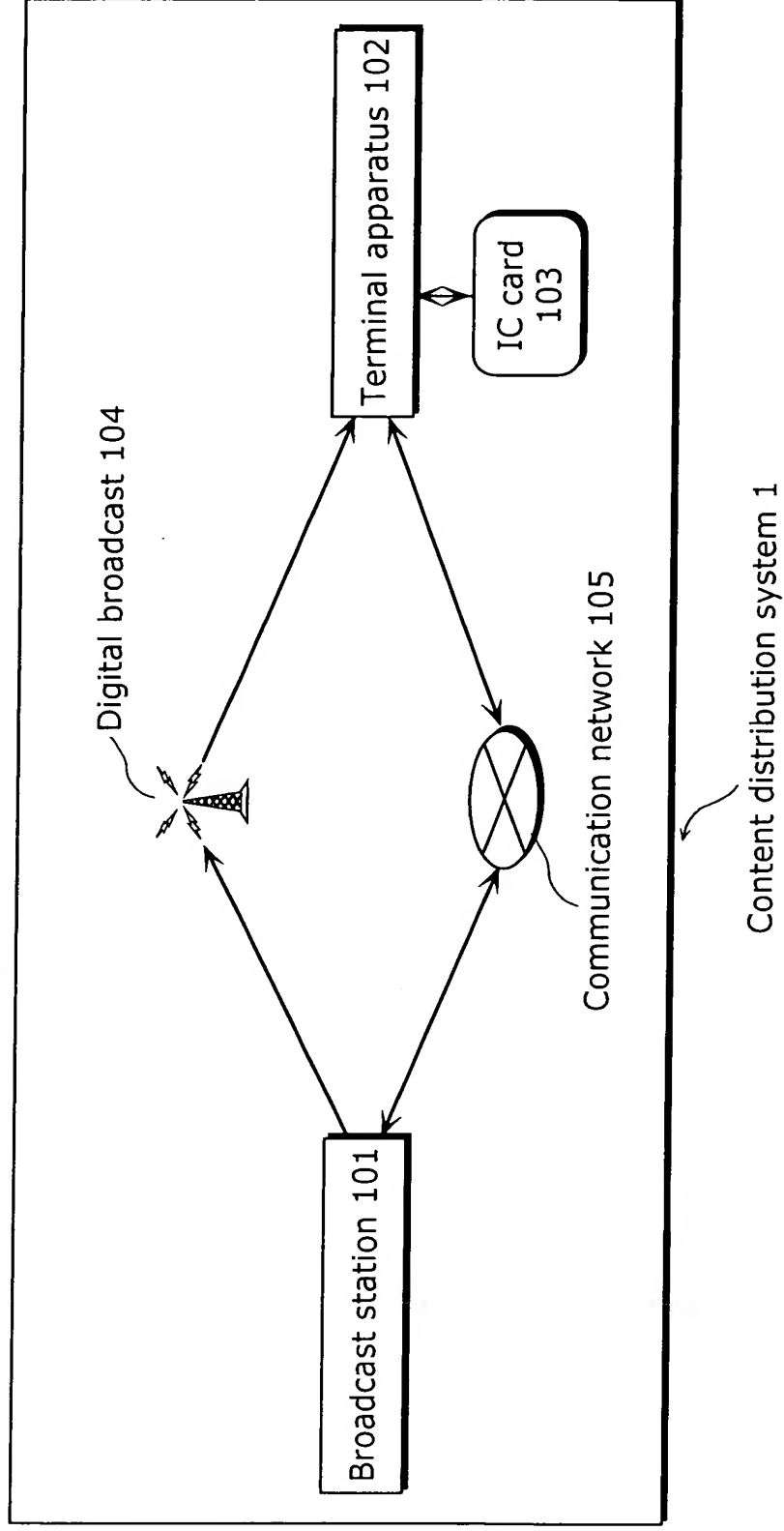


FIG. 2

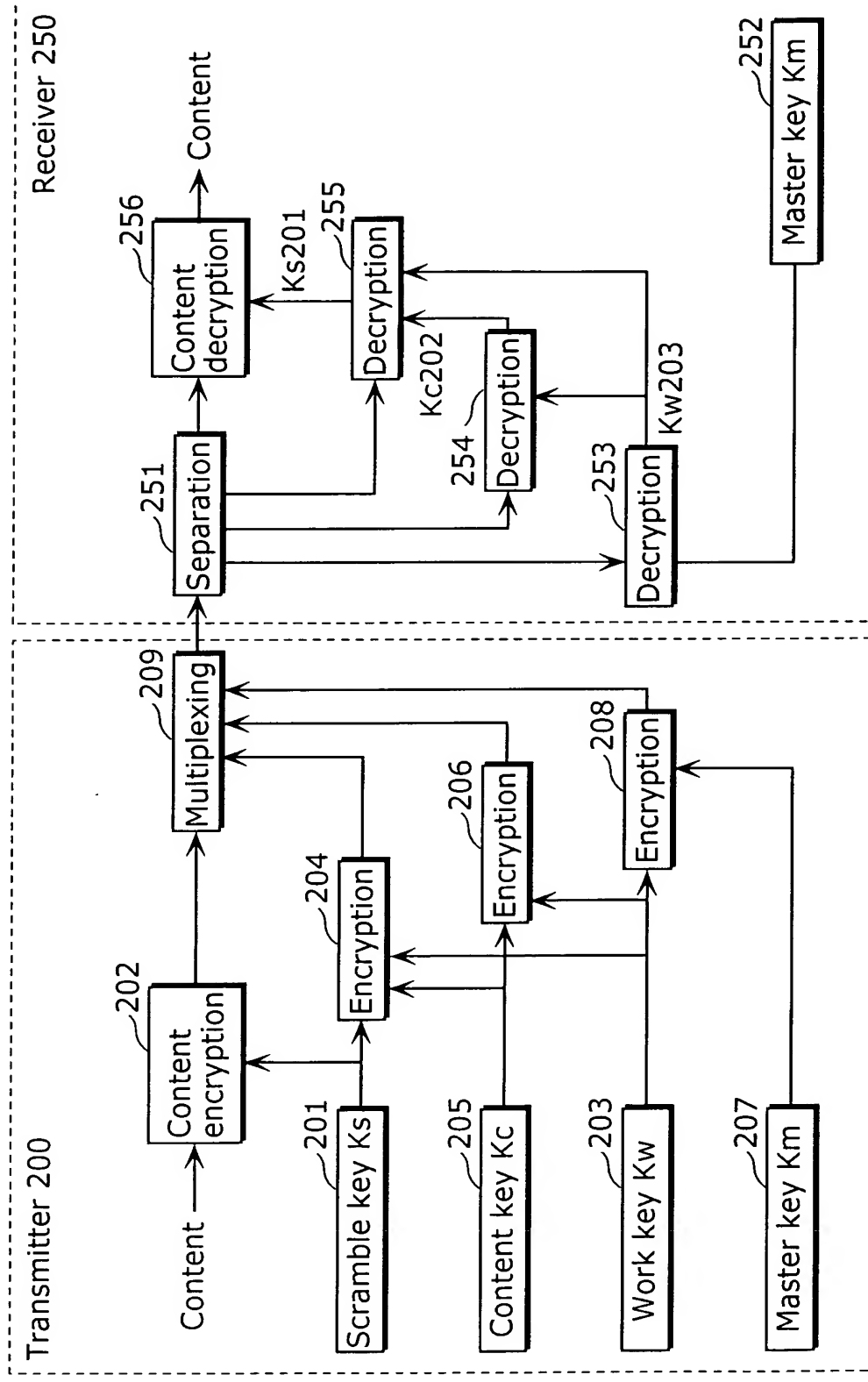


FIG. 3

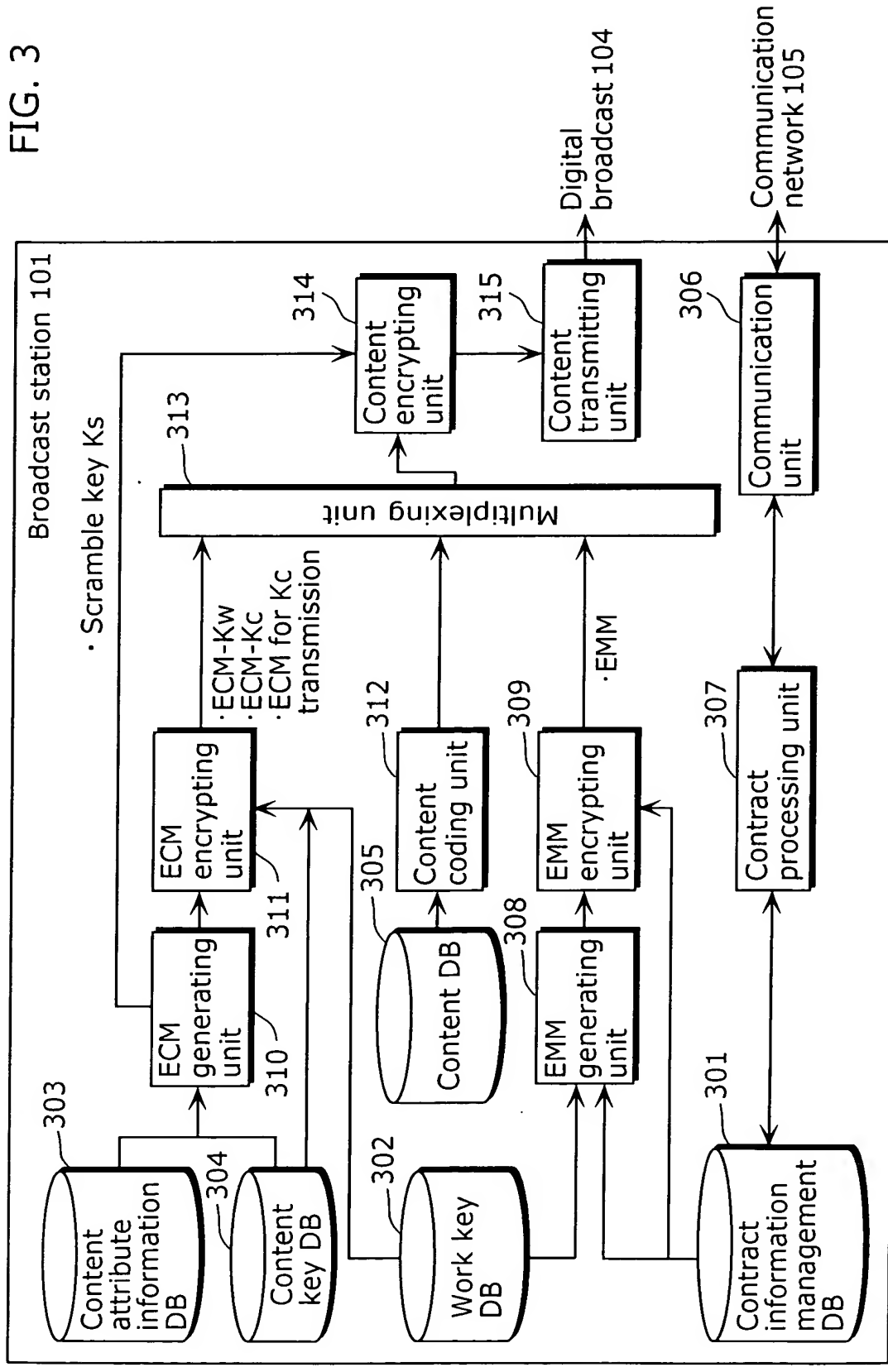


FIG. 4

401 Card ID	402 Tier contract ID	403 PPV contract ID	404 Validity period	405 Stored encryption key Km'	406 Master key Km
CARD-ID-1	TIERCONT-ID-1	PPVCONT-ID-1	2004/4/1~ 2005/3/31	0x1111...111	0x1111...111
CARD-ID-2	TIERCONT-ID-1	PPVCONT-ID-2	2003/12/1~ 2004/11/30	0x2222...222	0x2222...222
CARD-ID-3	TIERCONT-ID-2	PPVCONT-ID-1	2004/1/1~ 2004/4/30	0x3333...333	0x3333...333
CARD-ID-4	TIERCONT-ID-3	PPVCONT-ID-1	2004/1/1~ 2005/3/31	0x4444...444	0x4444...444
...

Contract information management table 400

FIG. 5

501 Work key ID	502 Work key Kw	503 Work key use starting date
WK-ID-1	0x123 ···cdf	2003/11/24
WK-ID-2	0x001 ···999	2004/12/20
...

Work key management table 500

FIG. 6

601 Content ID	602 License ID	603 Use condition	604 Contract information	605 License transformation period
CONTENT-ID-1	LICENSE-ID-1	Validity period: 1 month	TIERCONT-ID-1	2004/4/30
CONTENT-ID-2	LICENSE-ID-2	Validity period: 1 month. Reproduction frequency: 10 times	TIERCONT-ID-1 TIERCONT-ID-2	2004/4/15
CONTENT-ID-3	LICENSE-ID-3	Validity period: 3 months	TIERCONT-ID-1	2004/4/25
CONTENT-ID-4	LICENSE-ID-4	Validity period: 3 days. Writing frequency: once	PPVCONT-ID-1	2004/5/1
...

Content attribute information management table 600

FIG. 7

701 Content ID	702 License ID	703 Content key Kc
CONTENT-ID-1	LICENSE-ID-1	0x123 . . . cdf
CONTENT-ID-2	LICENSE-ID-2	0x001 . . . 999
CONTENT-ID-3	LICENSE-ID-3	0xabc . . . def
CONTENT-ID-4	LICENSE-ID-4	0x123 . . . 123
.

Content key management table 700

FIG. 8

Content ID	Content title	Broadcast time	File name
CONTENT-ID-1	Monday sports	2004/4/8 21:00:00	/SPORT/.../MONSPORTS.VC
CONTENT-ID-2	GOODBYE13	2004/4/8 22:00:00	/DRAMA/.../GOODBYE.VC
CONTENT-ID-3	Dog in the boom	2004/4/10 17:30:00	/ANIME/.../AMIBA.VC
CONTENT-ID-4	Sacred vessel 2	2004/5/1 19:00:00	/MOVIE/.../JINGI2.VC
...

Content management table 800

FIG. 9

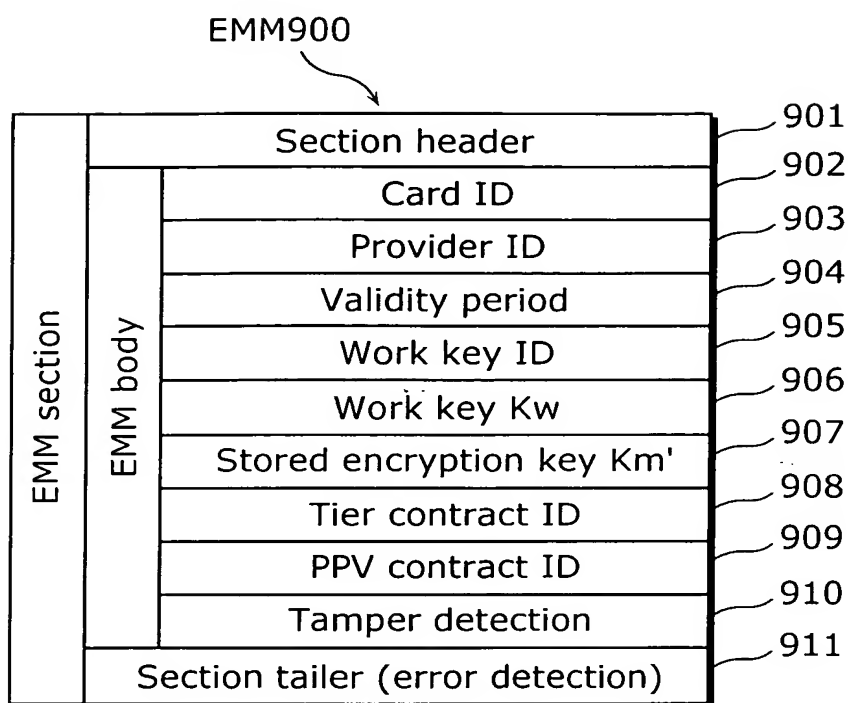


FIG. 10

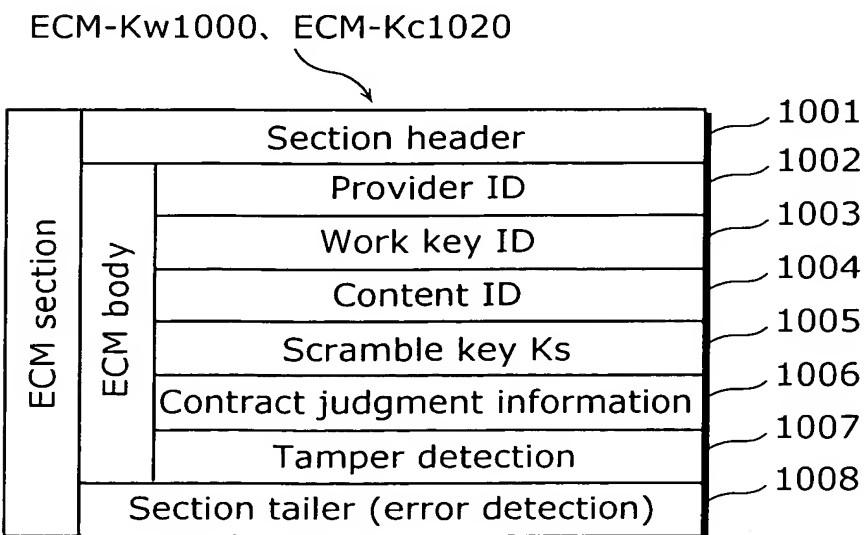


FIG. 11

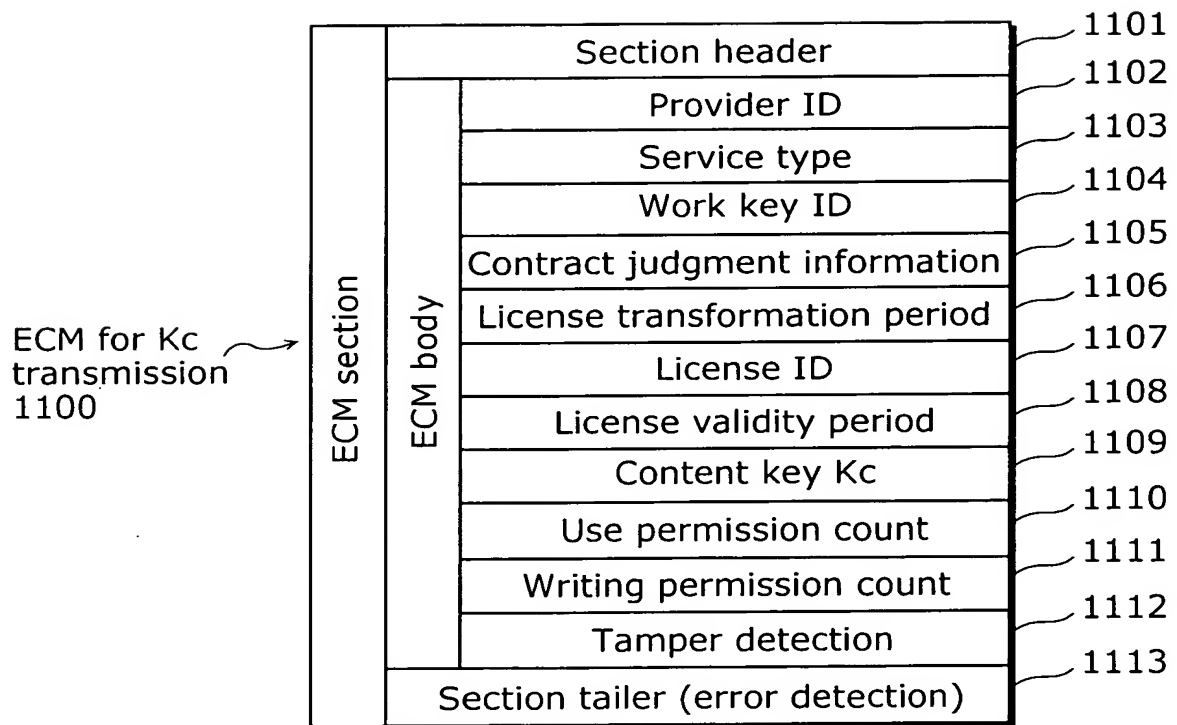


FIG. 12

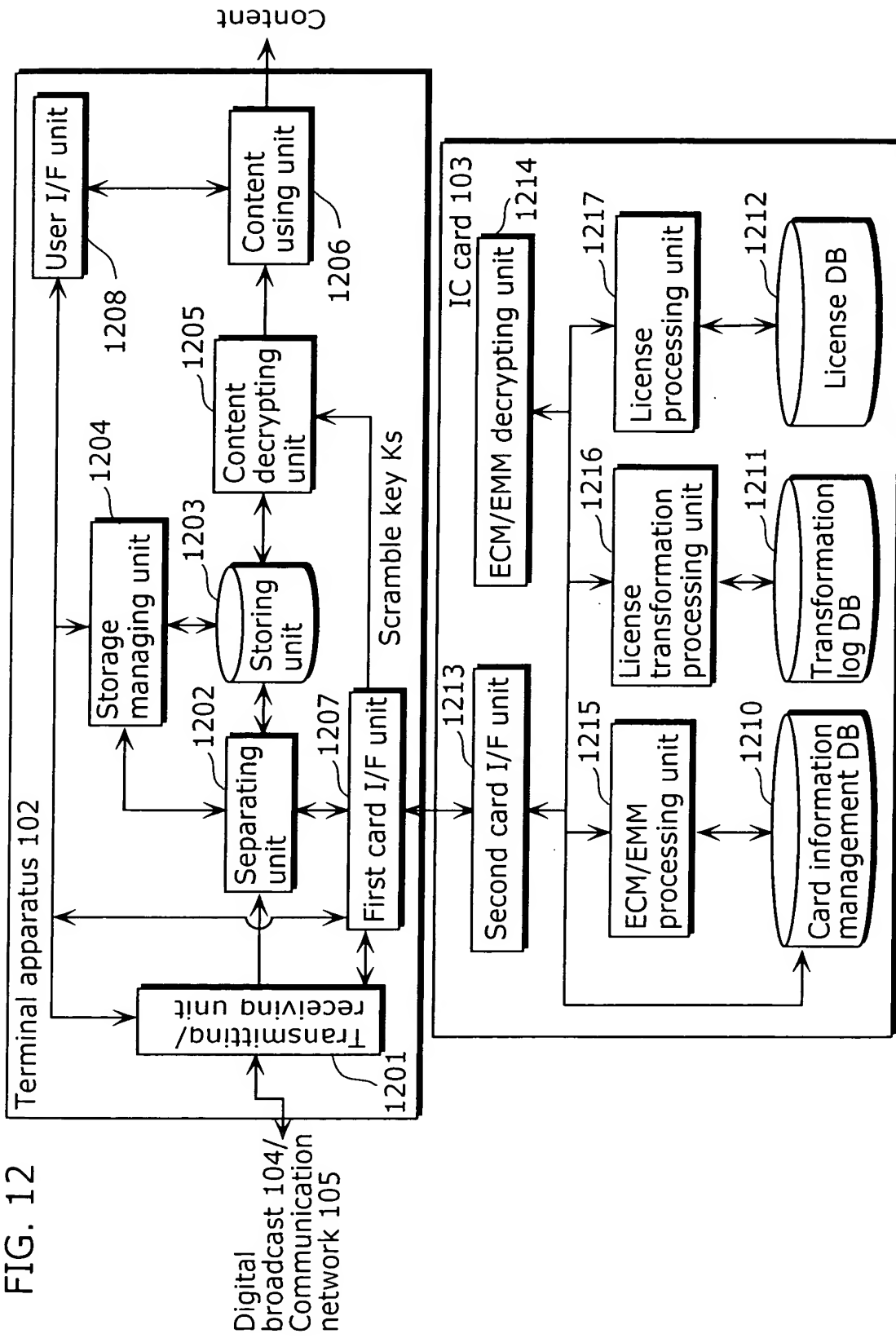


FIG. 13

1301	1302	1303
Card ID	Master key Km	Stored encryption key Km'
0x000 ··· 001	0x111 ··· 111	0x777 ··· 777

Common information table 1300

FIG. 14

1401 Provider ID	1402 Tier contract ID	1403 PPV contract ID	1404 Validity period	1405 Work key ID	1406 Work key Kw
SERVICE-ID-1	TIERCONT-ID-1	PPVCONT-ID-1	2004/4/1~ 2005/3/31	KW-ID-1	0x111...111
SERVICE-ID-10	—	PPVCONT-ID-1	2004/1/1~ 2005/3/31	KW-ID-1	0x555...555
...

Provider unique information table 1400

FIG. 15

License ID	License transformation period
LICENSE-ID-1	2004/4/30
LICENSE-ID-2	2004/4/15
LICENSE-ID-3	2004/4/25
LICENSE-ID-4	2004/5/1
...	...

TL1500

FIG. 16

License identifier	1601
License ID	1602
Validity period	1603
Reproduction count	1604
Writing count	1605
Content key Kc	1606
Tamper detection	1607

FIG. 17

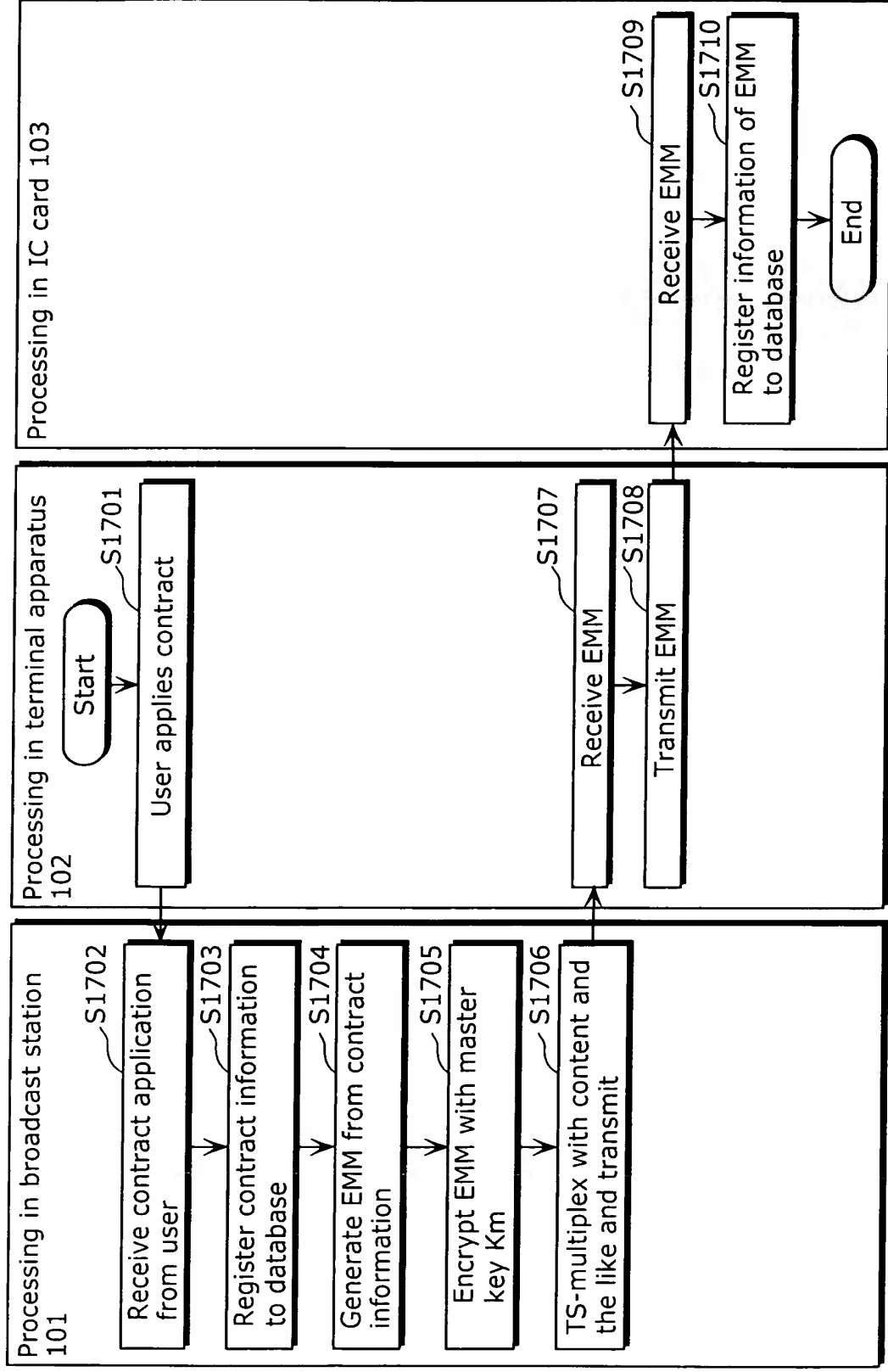


FIG. 18

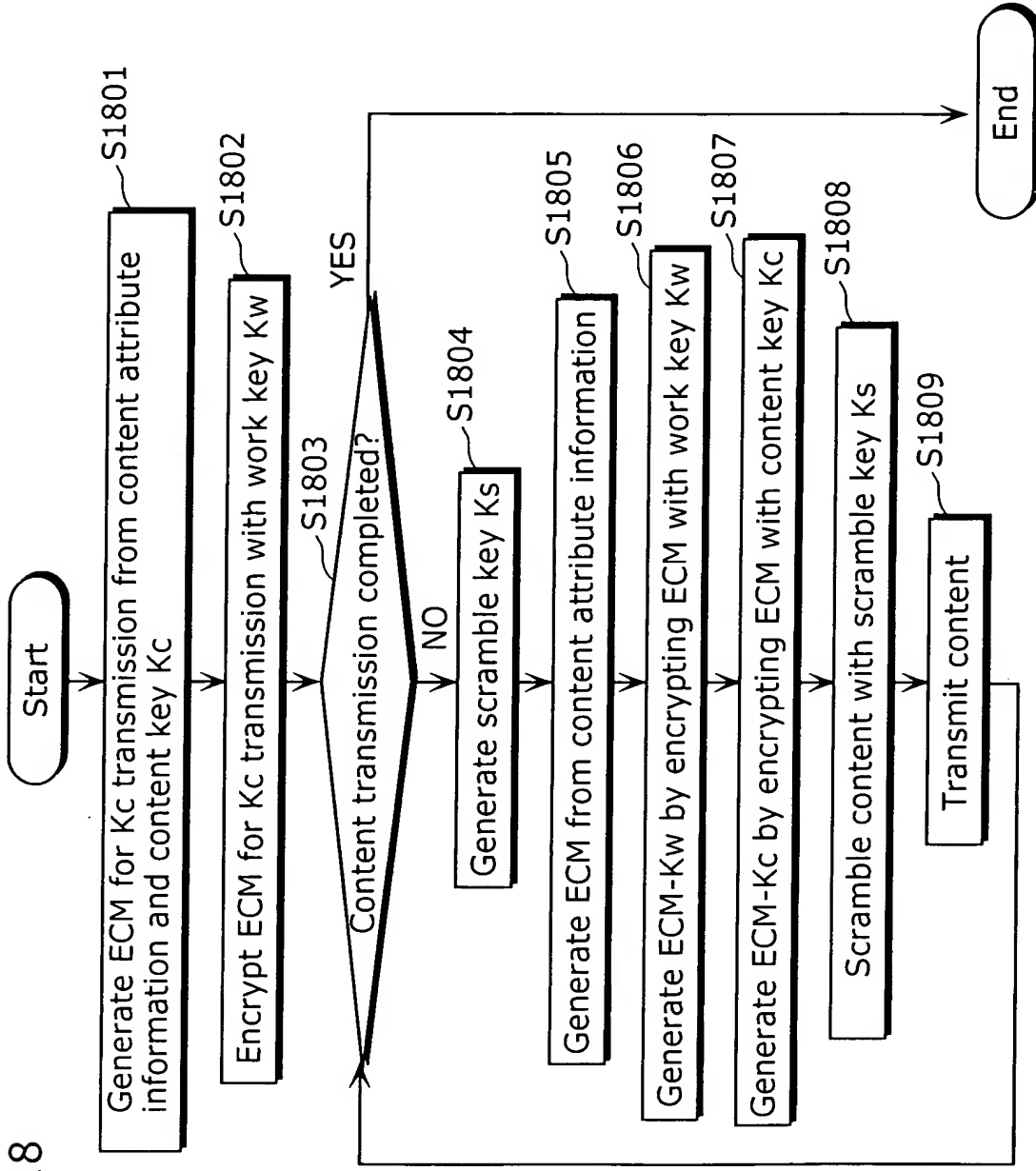


FIG. 19

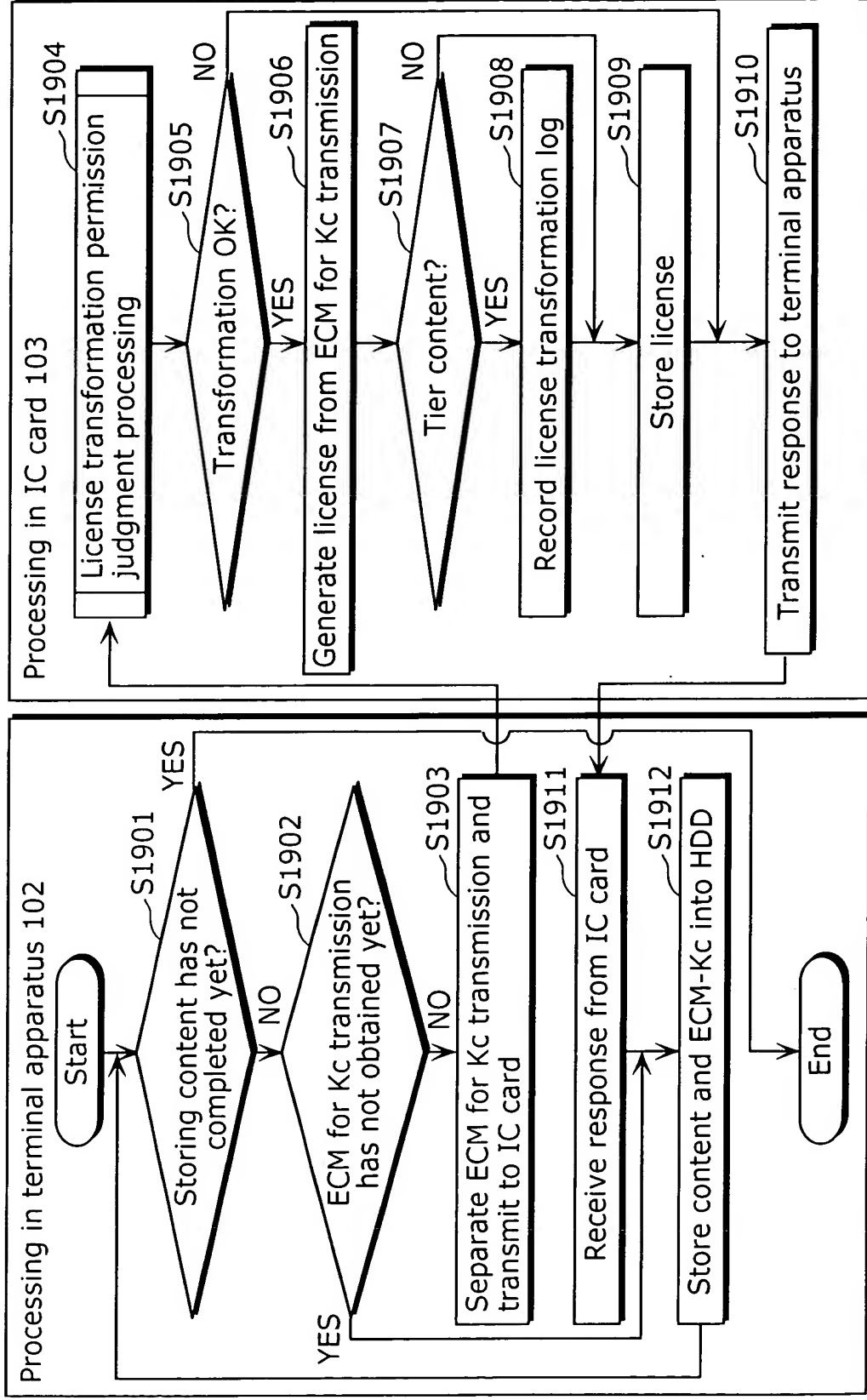


FIG. 20

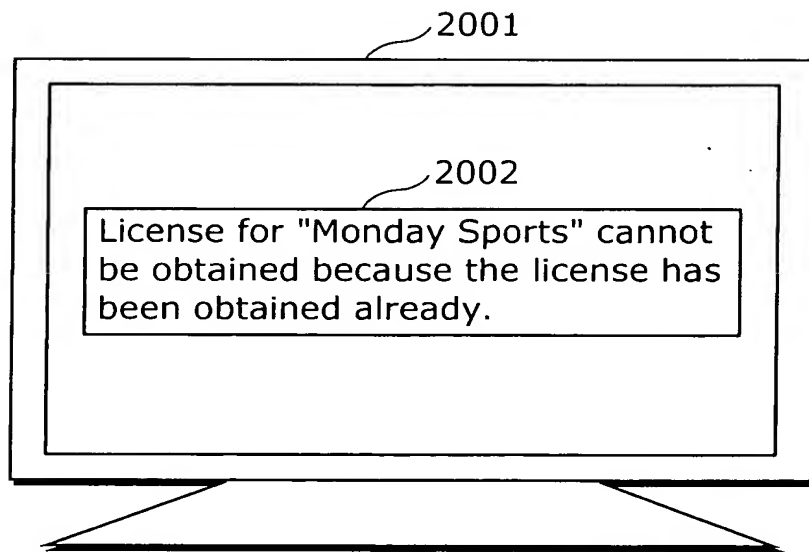


FIG. 21

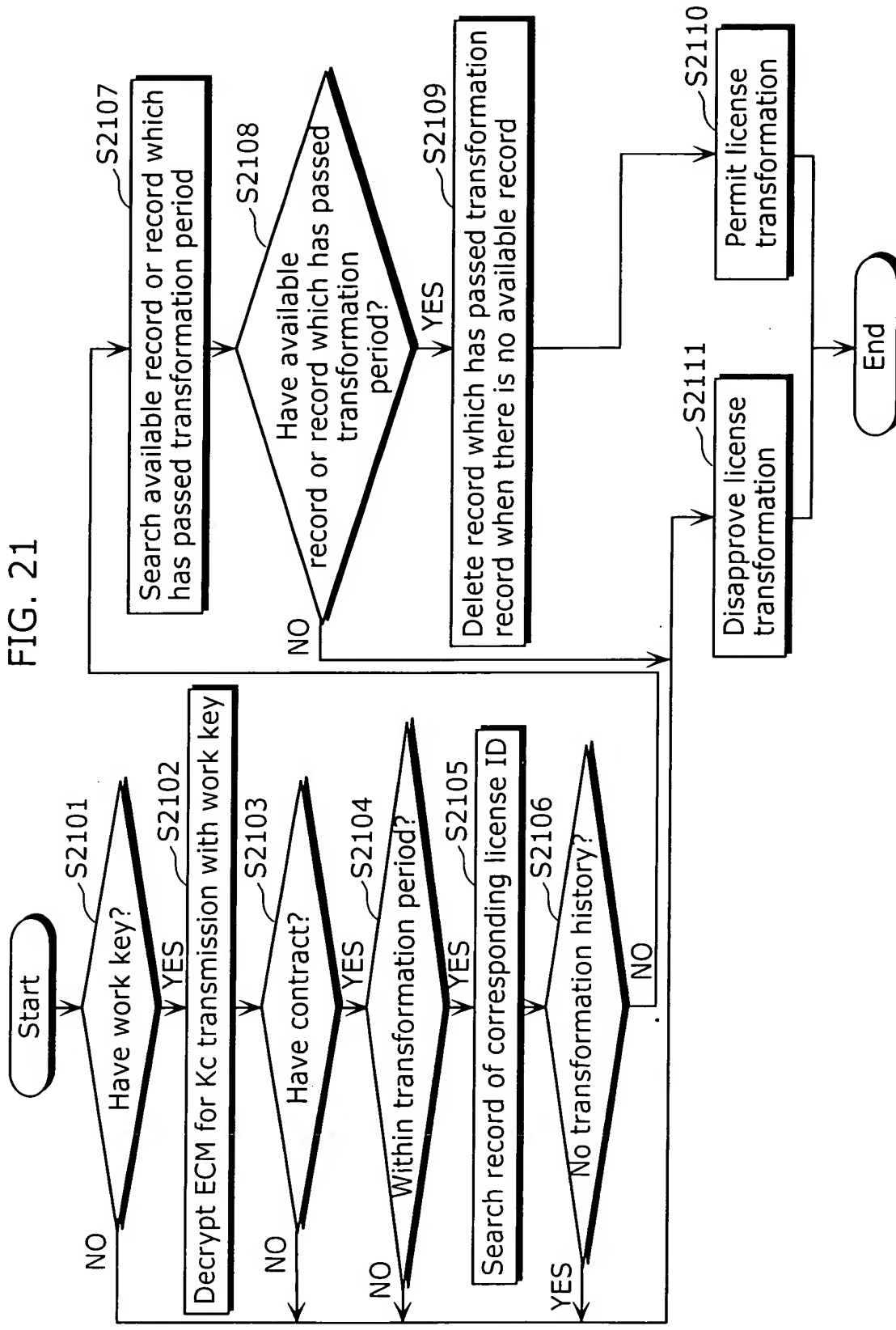


FIG. 22

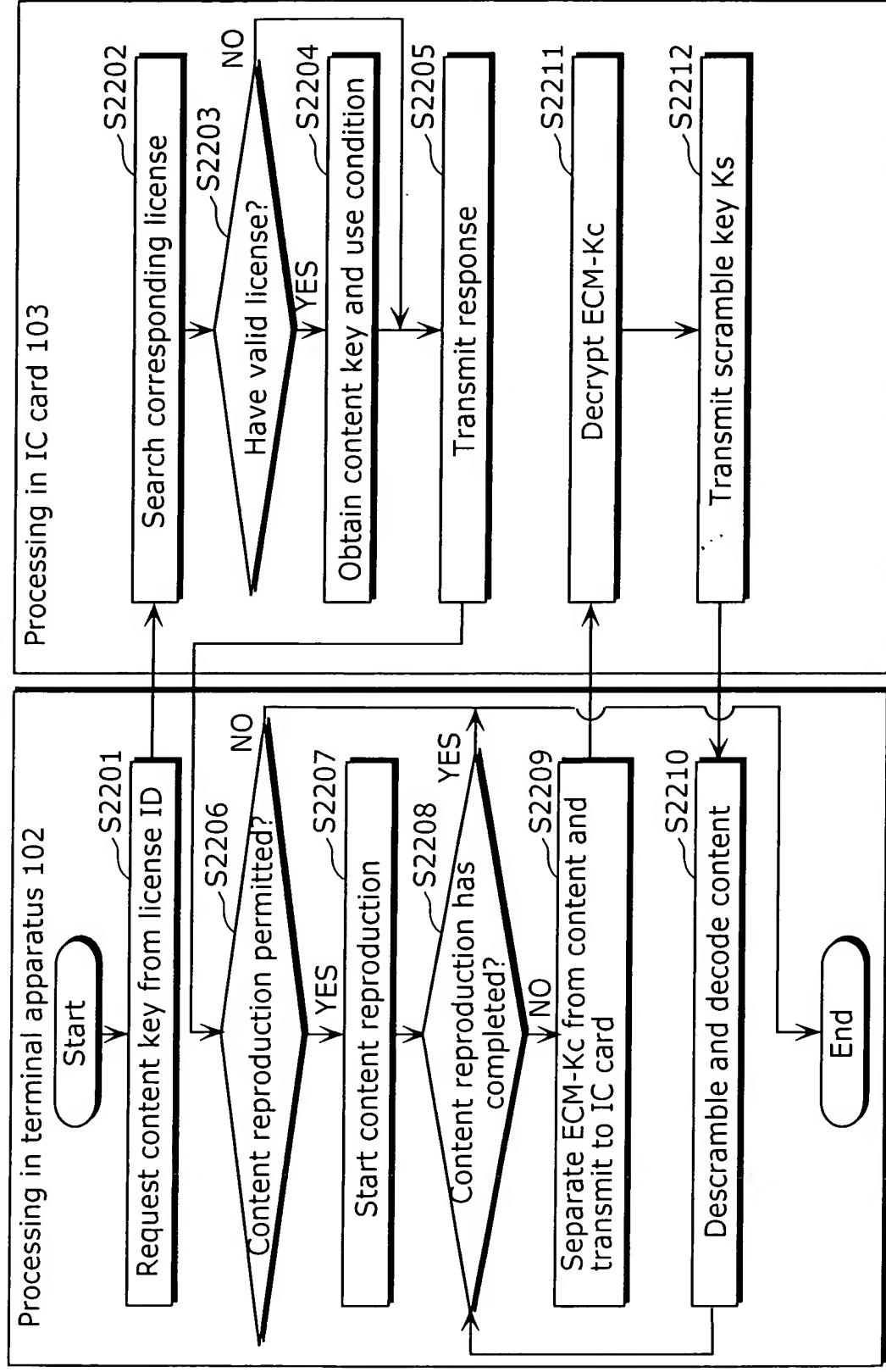


FIG. 23

The diagram illustrates a system architecture for a terminal apparatus 102 and an IC card 103. The terminal apparatus 102 is shown as a large rectangular block containing several internal units. It receives input from a 'Digital broadcast 104/Communication network 105' at the bottom left. The input passes through a 'receiving/transmitting unit 1201'. The output of 1201 is split: one path goes to a 'Separating unit 1202', and the other goes to a 'User I/F unit 1208'. The separating unit 1202 is connected to a 'Storage managing unit 1204' and a 'Storing unit 1203'. The storage managing unit 1204 is also connected to the User I/F unit 1208. The storing unit 1203 is connected to a 'Content decrypting unit 1205'. The content decrypting unit 1205 is connected to a 'Content using unit 1206'. The content using unit 1206 is connected to the User I/F unit 1208. A 'First card I/F unit 1207' is connected to the separating unit 1202 and the content decrypting unit 1205. The IC card 103 is shown as a separate block to the right of the terminal apparatus. It contains a 'Second card I/F unit 1213' connected to the first card I/F unit 1207. The second card I/F unit 1213 is connected to an 'ECM/EMM processing unit 1215'. The ECM/EMM processing unit 1215 is connected to a 'Card information management DB 1210'. The ECM/EMM processing unit 1215 is also connected to an 'ECM/EMM re-encrypting unit 1214'. The ECM/EMM re-encrypting unit 1214 is connected to a 'License transformation processing unit 1216'. The license transformation processing unit 1216 is connected to a 'Transformation log DB 1211'. The license transformation processing unit 1216 is also connected to a 'License processing unit 1217'. The license processing unit 1217 is connected to a 'License DB 1212'. A 're-encrypting unit 2301' is also shown, connected to the ECM/EMM re-encrypting unit 1214.

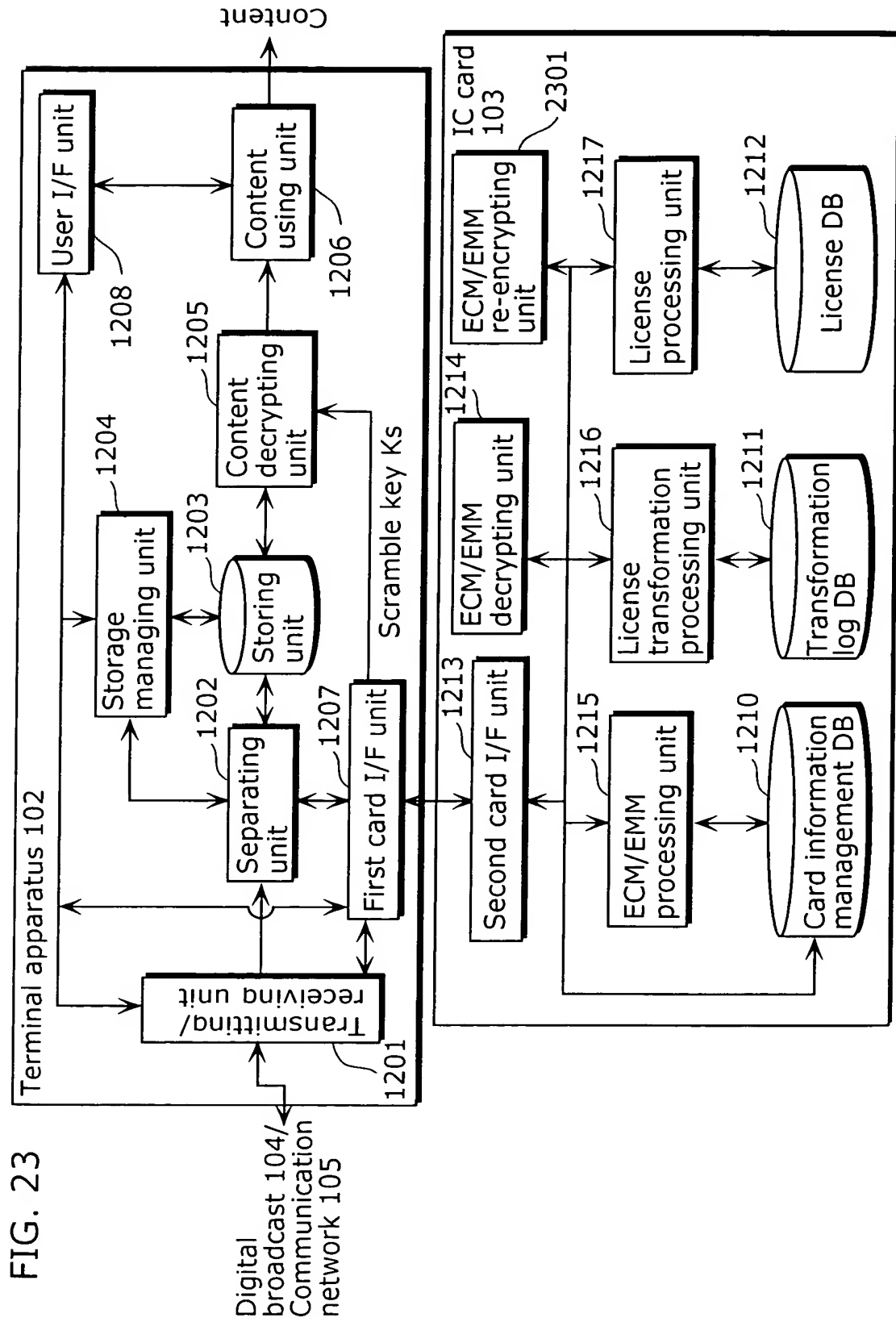


FIG. 24

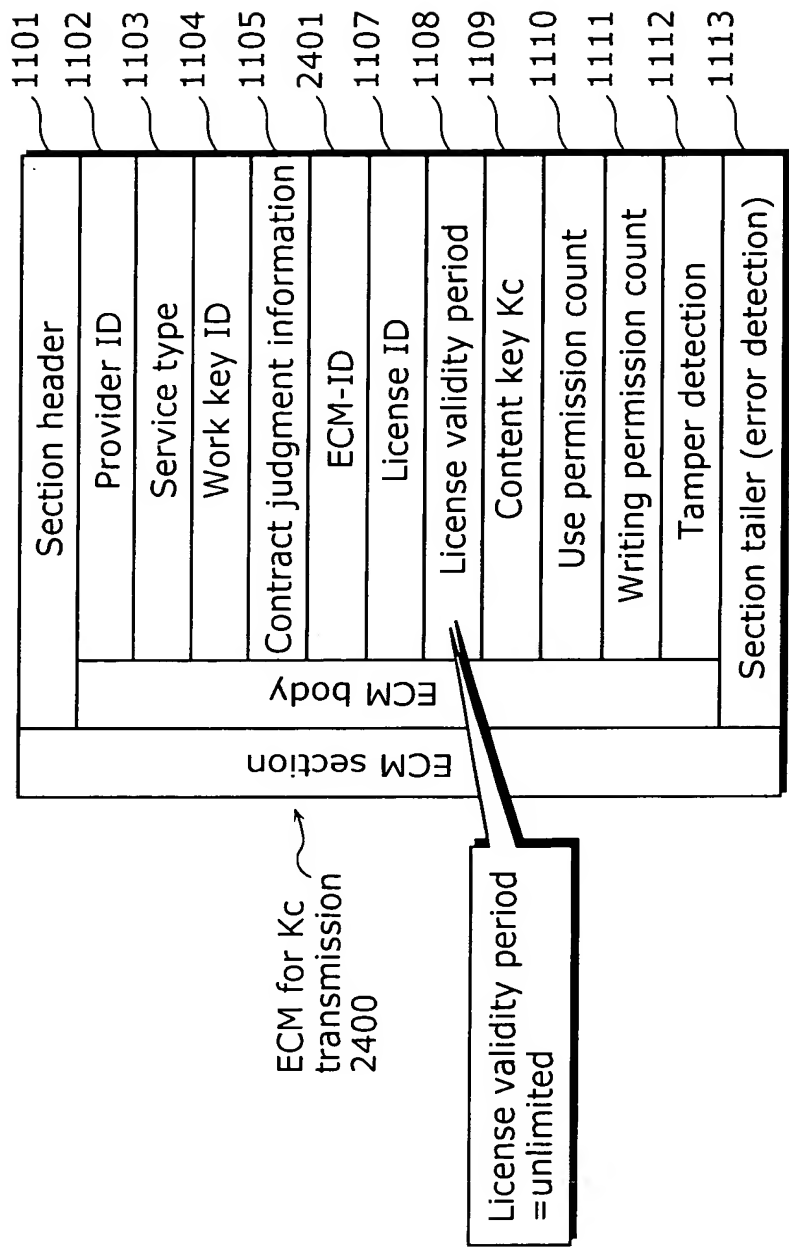


FIG. 25

2501 Provider ID	2502 License ID	2503 Service type	2504 Purchase information	2505 License transformation period	2506 Obtainment license frequency
SERVICE-ID-1	LICENSE-ID-1	TIERCONT	—	2004/4/15	2 times/3 times (2004/4/14, 2004/4/15)
SERVICE-ID-5	LICENSE-ID-2	TIERCONT	—		
SERVICE-ID-30	LICENSE-ID-3	TIERCONT	—	2004/5/15	
SERVICE-ID-2	LICENSE-ID-4	PPVCONT	Purchased (2004/4/25)		once/once (2004/4/24)
...

TL2500

FIG. 26

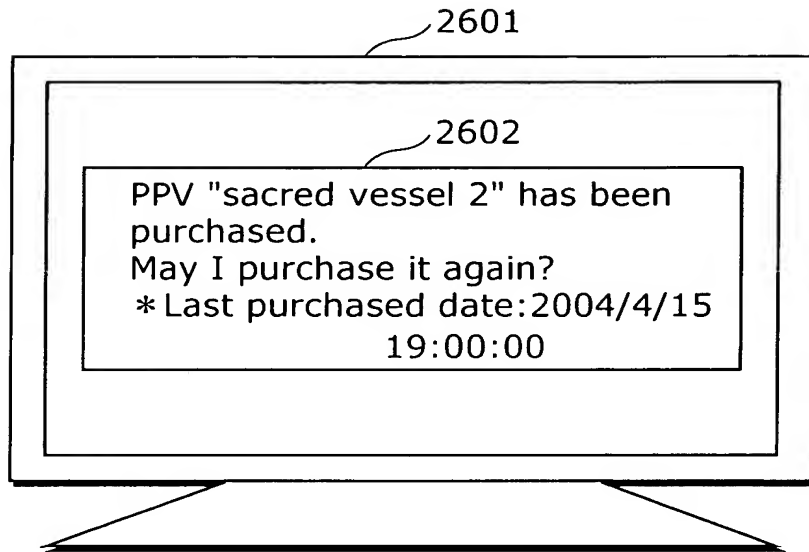


FIG. 27

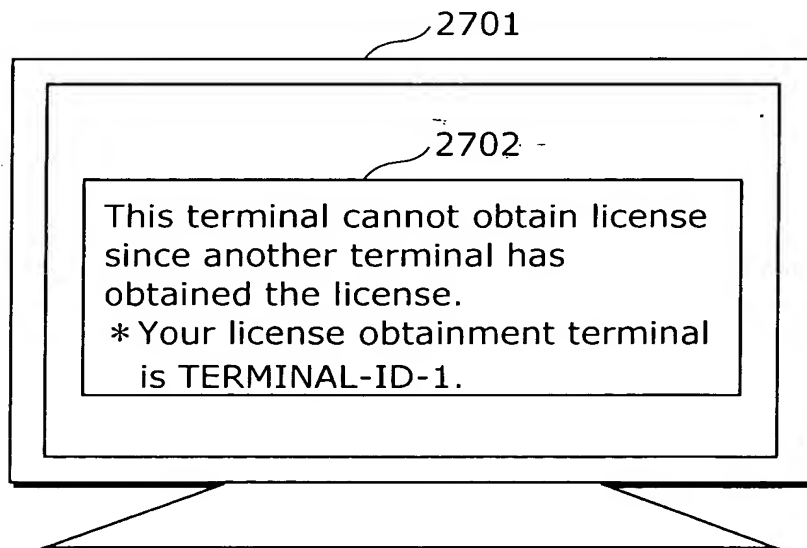


FIG. 28

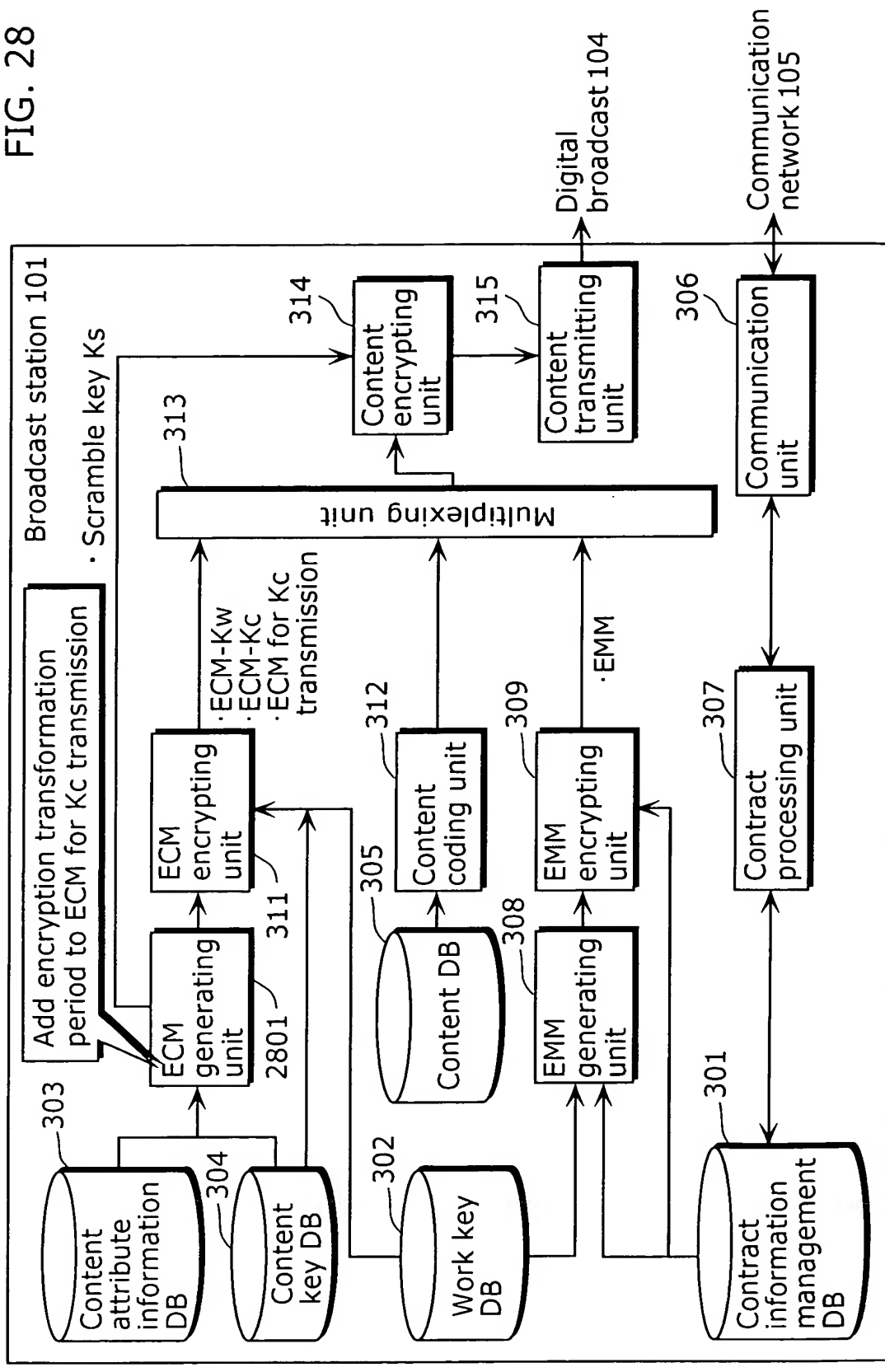


FIG. 29

2901 Content ID	2902 License ID	2903 Use condition	2904 Contract information	2905 Encryption transformation period
CONTENT-ID-1	LICENSE-ID-1	Validity period: 1 month	TIERCONT-ID-1	2004/4/15
CONTENT-ID-2	LICENSE-ID-2	Validity period: 1 month. Reproduction count: 10 times	TIERCONT-ID-1 TIERCONT-ID-2	2004/4/18
CONTENT-ID-3	LICENSE-ID-3	Validity period: 3 months	TIERCONT-ID-1	2004/4/17
CONTENT-ID-4	LICENSE-ID-4	Validity period: 3 days. Writing count: once	PPVCONT-ID-1	2004/5/14
...

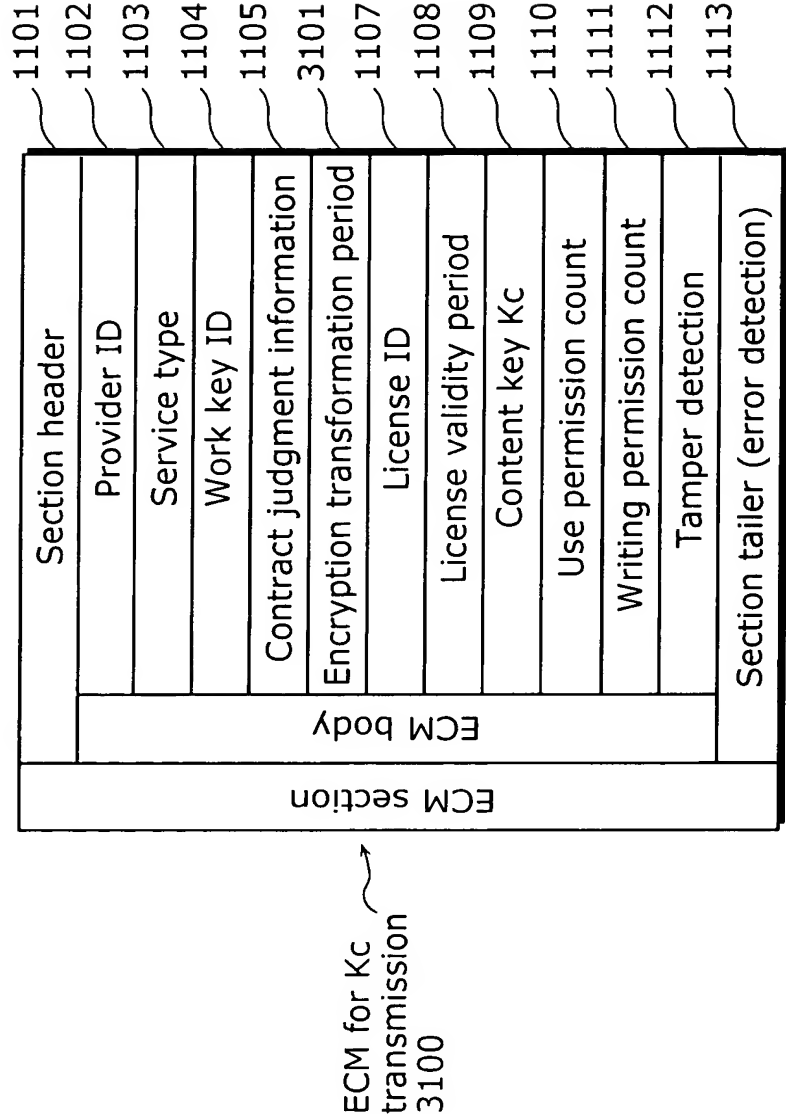
Content attribute information management table 2900

FIG. 30

801 Content ID	802 Content title	803 Broadcast time	804 File name
CONTENT-ID-1	Monday sports	2004/4/8 21:00:00	/SPORT/...MONSPORTS.VC
CONTENT-ID-2	GOODBYE13	2004/4/8 22:00:00	/DRAMA/...GOODBYE.VC
CONTENT-ID-3	Dog in the boom	2004/4/10 17:30:00	/ANIME/...AMIBA.VC
CONTENT-ID-4	Sacred vessel 2	2004/5/1 19:00:00	/MOVIE/...JINGI2.VC
...

Content management table 3000

FIG. 31



Terminal apparatus 102

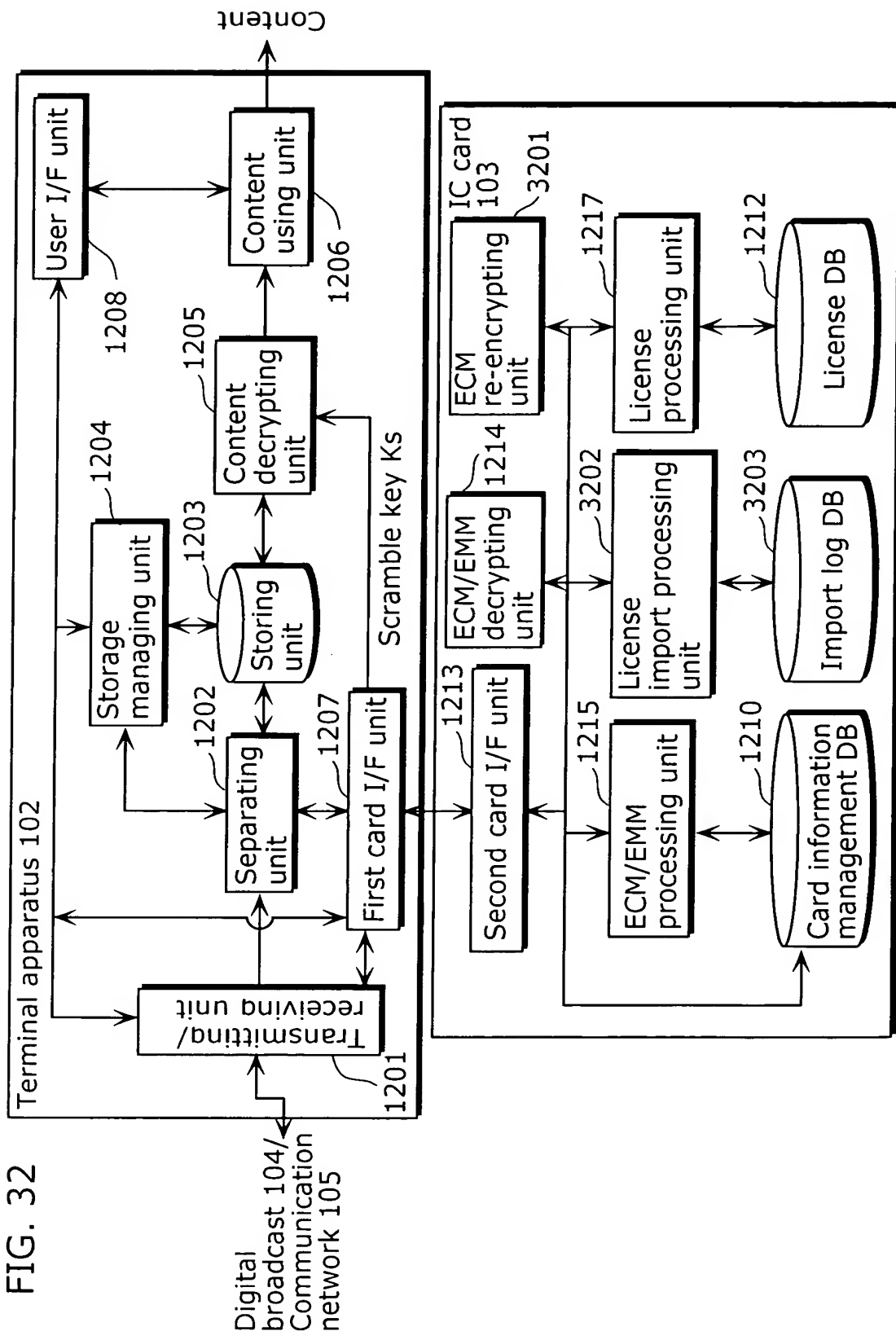


FIG. 33

License ID	License validity period
LICENSE-ID-1	2004/5/8
LICENSE-ID-2	2004/5/8
LICENSE-ID-3	2004/7/10
LICENSE-ID-4	2004/5/4
...	...

Import log table 3300

FIG. 34

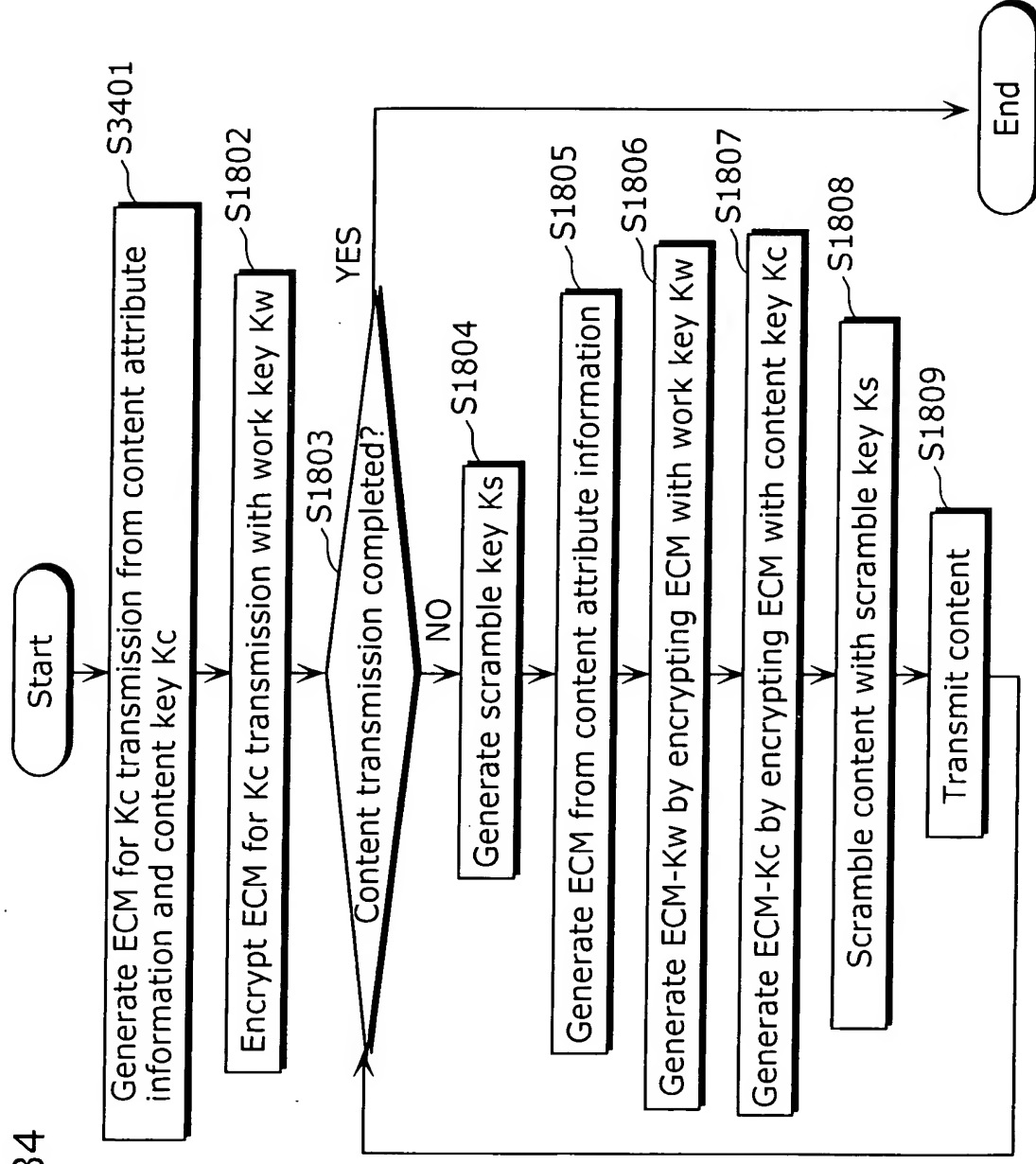


FIG. 35

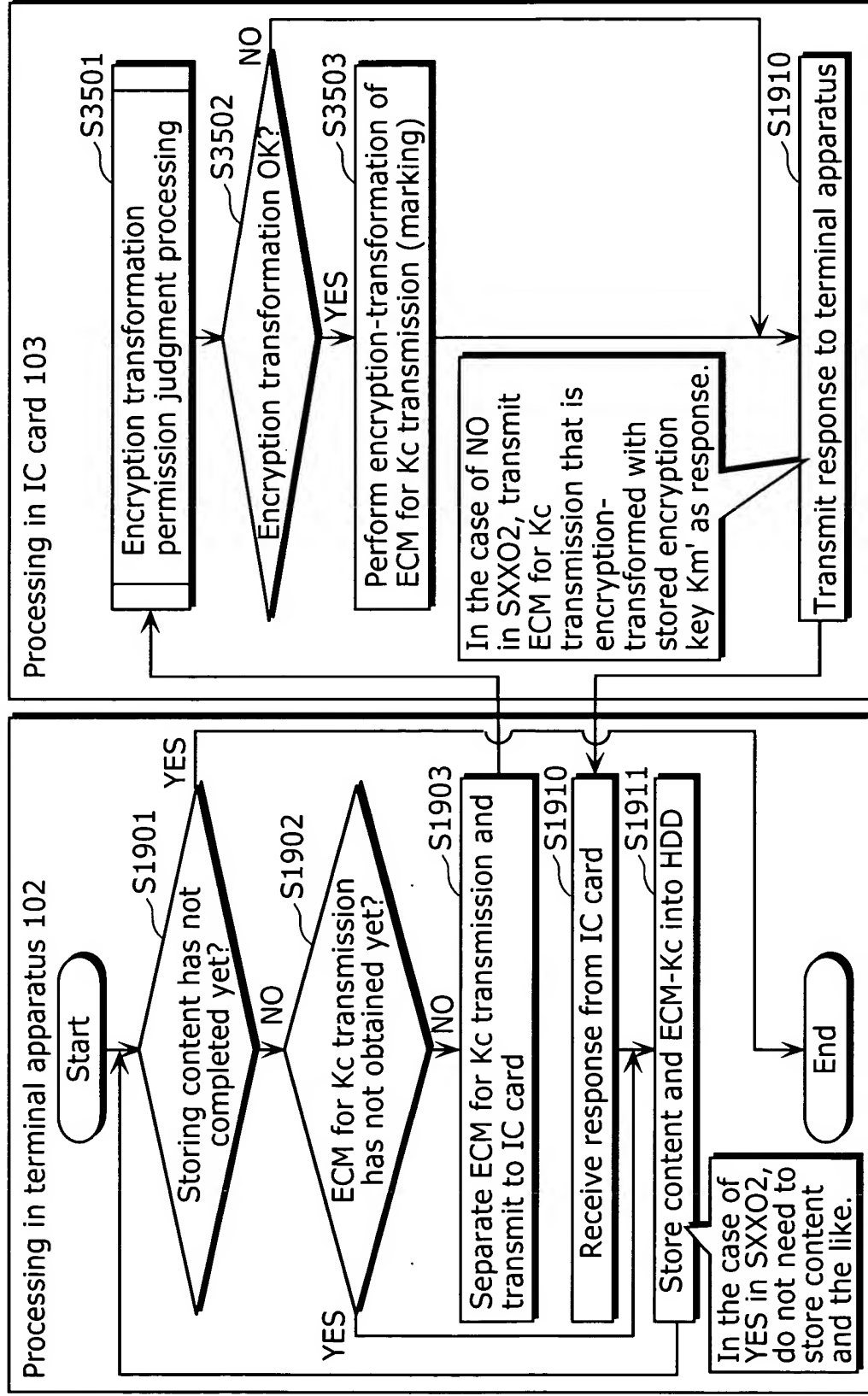


FIG. 36

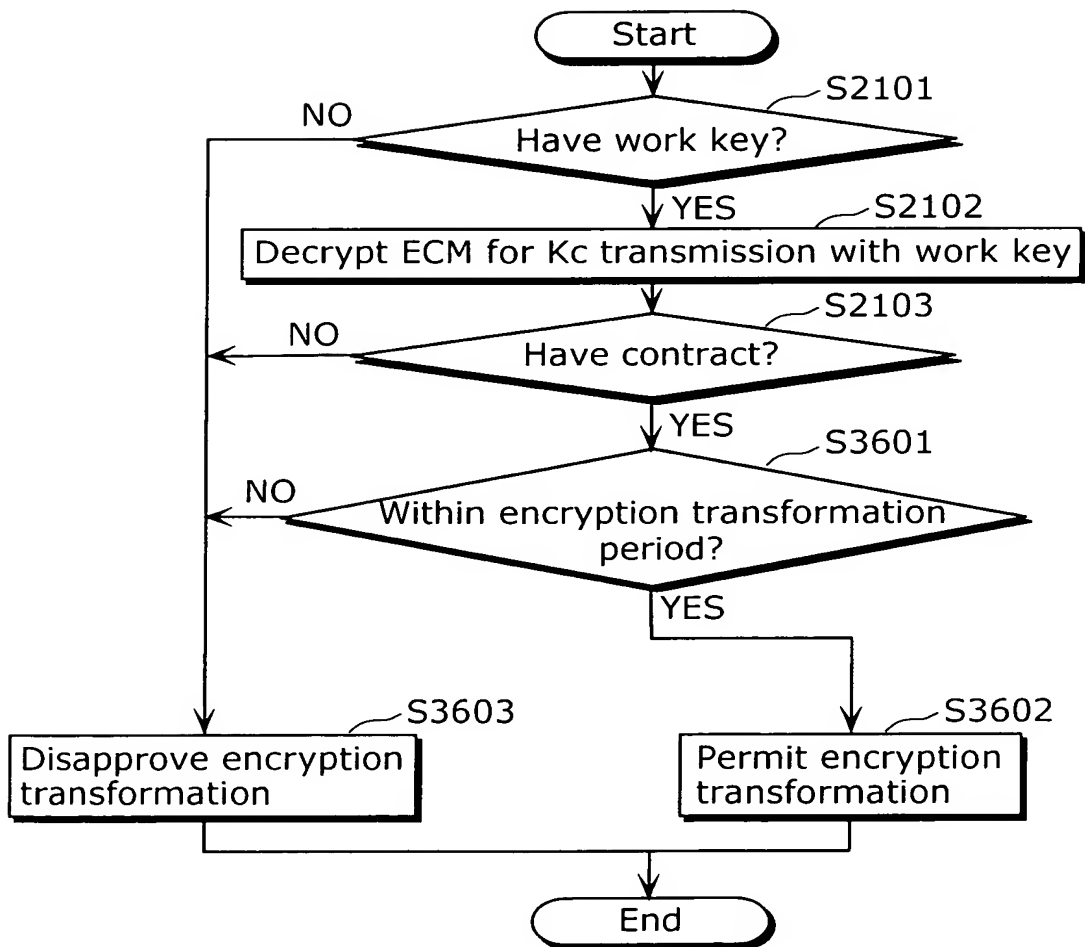


FIG. 37

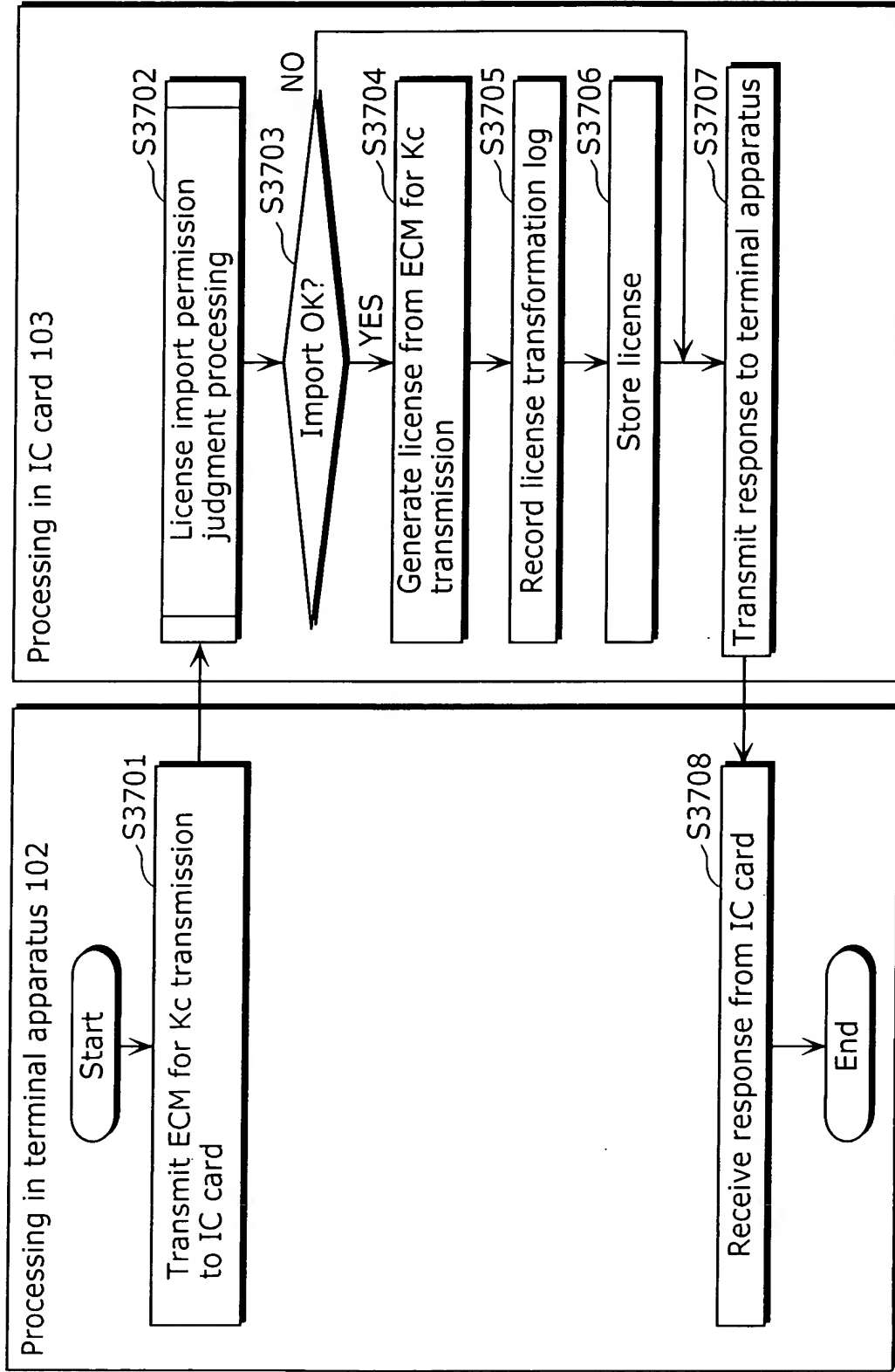


FIG. 38

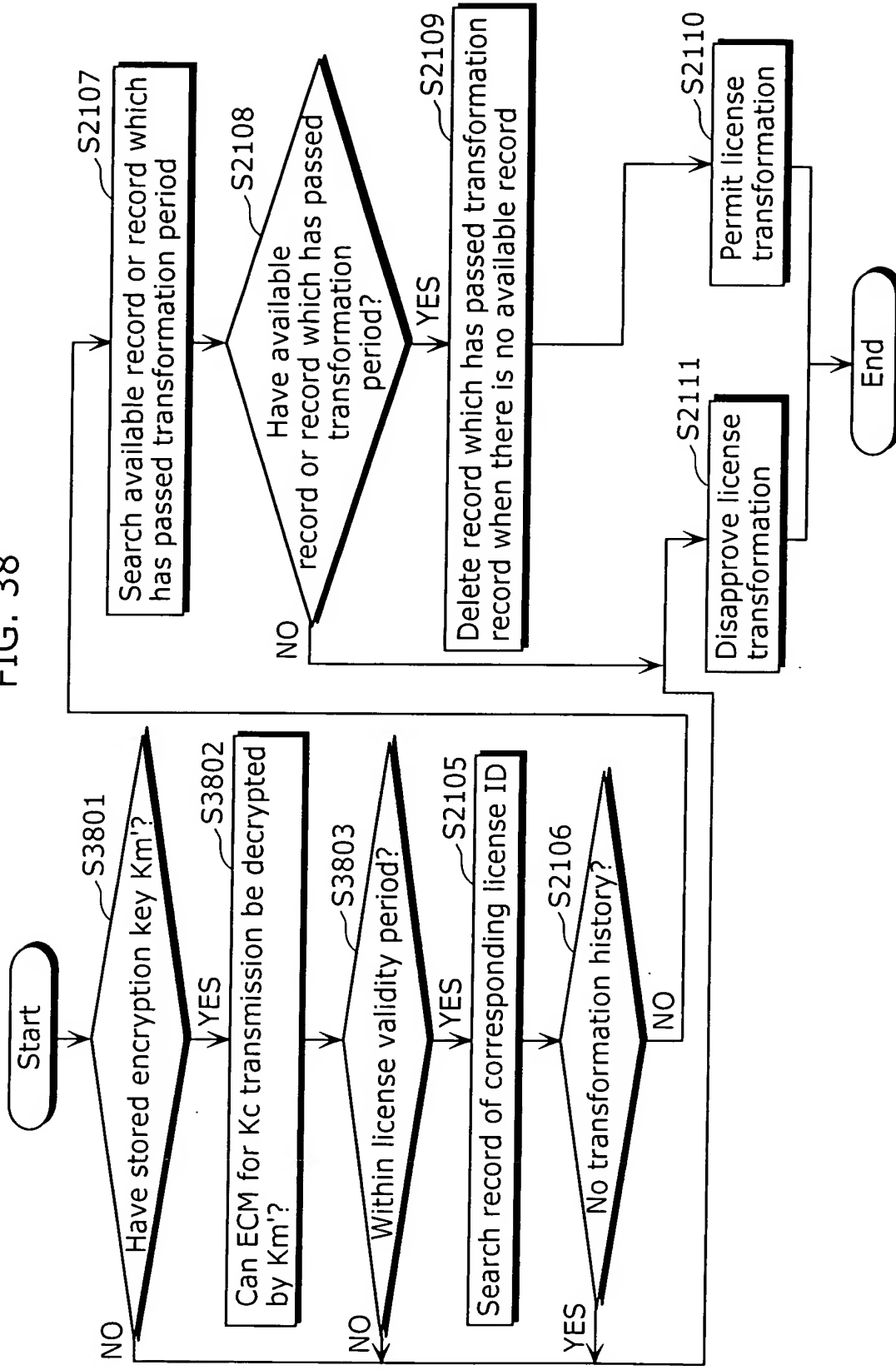


FIG. 39

3901 Package ID	3902 Validity period	3903 In-package license ID	3904 Obtained license ID
PKG-ID-1	2004/5/8	LICENSE-ID-1 LICENSE-ID-2 ... LICENSE-ID-10	LICENSE-ID-1 LICENSE-ID-2
PKG-ID-2	2004/5/8	LICENSE-ID-100 LICENSE-ID-101	LICENSE-ID-101
...

Import log table (IL: Import List) 3900

FIG. 40

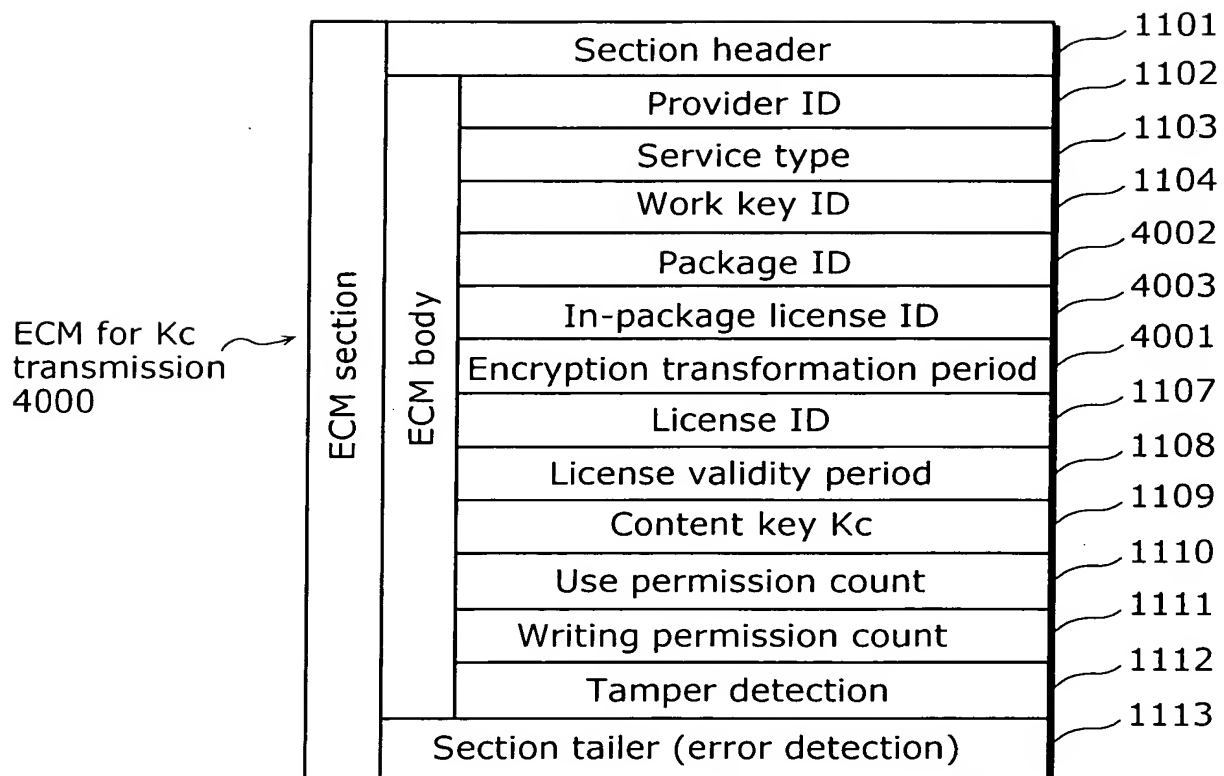


FIG. 41

